PUBLIC HEALTH REPORT

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Hyaline Membrane Disease

AN ESTIMATED 4,000 infants are born each year in California with the respiratory distress syndrome —so-called hyaline membrane disease. This disorder accounts for approximately 25 percent of infant deaths occurring in the first 28 days of life. The incidence is correlated with birth weight and is highest among very small prematures, over 90 percent of the cases being in infants under 2,500 grams. The disease develops in approximately 15 to 20 percent of infants with birth weights under 2,500 grams. The highest mortality rate from the disease is also reportedly in small prematures — 70 percent.

The disease usually runs a rapid course over the first few days of life. Unless there is clinical improvement during this period, followed by gradual clearing of x-ray findings over a period of one to two weeks, the infants die. Potential complications of the disease, or conditions coinciding with it, such as brain hemorrhage, pulmonary hemorrhage, collapse of the lungs or certain congenital anomalies, require highly specialized care. Following the acute stage, the infants need care until they reach a weight which makes it safe to discharge them from the hospital. This means an average of three to four weeks of additional stay in hospital.

In recent years several hospitals have developed intensive care nurseries to provide specialized care for such infants. The initial reports from these hospitals indicate that an improvement in mortality rate is experienced and surviving infants suffer little permanent damage. This approach is extremely costly, and detailed analysis will be required to evaluate it before extending it can be generally recommended.

The California Legislature has taken considerable interest in this disease. In 1967 it passed ACR 108, requesting the State Department of Public Health to study the disease, its treatment and cost, and to report to the Legislature. During the 1968 session, the Legislature passed AB 1413, to take effect in November, 1968, requiring the Department to evaluate further, in a three-year pilot project, the cost and effectiveness of treating the disorder and to make annual progress reports.

The Department's Bureau of Maternal and Child Health began to implement the law by surveying all 413 California hospitals with maternity services to find out the number and distribution of intensive care nurseries. Fifty-nine of the 413 claimed to have such a unit, but telephone inquiries and site visits determined that only 15 such operating units of varying size could be properly classified as ICN units. (Some hospitals appeared to be describing premature units—that is, isolettes or incubators — rather than true intensive care nursery [ICN] units with monitoring devices.)

Sixty-five stated that they are considering the possibility of adding such a unit and 289 hospitals indicated that they had no plans for ICN units. There are ICN units in operation in Alameda, San Francisco, Santa Clara, Los Angeles, San Bernardino and Orange counties, and others are planned in San Diego, Fresno and Sacramento counties. Pregnant women with a history of premature delivery or at risk of it should be admitted to a hospital where specialized care is available. Premature babies born where such units are not available should be transported in ambulances specially equipped to care for them and accompanied by at least one trained person enroute to an ICN.

Plans for carrying out the provisions of AB 1413 call for both retrospective and prospective studies of the disease. The frequency and degree of severity of the disorder, cost and effectiveness of treatment and final outcome in a representative population of newborns during 1965, before the advent of specialized ICN units, will be studied. This will involve a review of over 3,500 premature births and 700 perinatal deaths in 1965, to determine mortality and long-term morbidity. The study will estimate the costs of treatment of this disorder to the individual, the community and the state, in 1965.

At the same time, the Department will conduct a continuing study of cases occurring in 1969, 1970 and 1971 in which the patients are cared for in intensive newborn care units, and will compare results and costs with the experience in the same hospitals before the ICN unit was established. An ad hoc advisory group of the California Medical Association, consisting of specialists in care of the newborn, will assist the Department in designing a competent and definitive study of the disease. The advisory committee reviewed and approved initial Department protocol and the program is now in operation.

Perhaps the most significant by-product of the Department's study of hyaline membrane disease will be an examination and review of current nursery practices in hospitals. At present, there is much variation among hospitals as to how their nurseries are arranged and as to which areas infants are assigned. A definition of intensive care nursery units and a better description of modern nursery practices ought to come out of this study, and that should aid the Department in revising hospital licensing and certification laws in this field.

"COLDS" AND COW'S MILK

"I'm impressed with how frequently perennial allergic rhinitis in children, often misinterpreted as repeated colds or chronic colds, is actually due to reactivity to cow's milk. (I say reactivity because I don't know what this is. In some hands, it's associated with a large measure of precipitin reactivity in the serum against cow's milk or some of its products; in other hands, this is not so easily demonstrated.) But I think a trial diet free of cow's milk for the child who has chronic upper respiratory problems should be given a chance."

—VICTOR C. VAUGHN, III, M.D., Philadelphia
Extracted from *Audio-Digest Pediatrics,* Vol. 14, No. 22, in the Audio-Digest Foundation's subscription series of tape-recorded programs.